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Patent

0-04-107 (13899/US/01)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Yaakov
Serial no.: 10/502,249
Filed: December 27, 2004
Title: LOW FREQUENCY INVERTER FED BY A HIGH
FREQUENCY AC CURRENT SOURCE
Examiner: A Minh
Art Unit: 2821

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir/Madam:

Response and Amendment

This response is being submitted in response to the office action mailed on December 15, 2005. The applicant appreciates the examiner's opinion that claims 7-9, 13-14, and 16-18 "are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims." Applicant, however, believes the other claims are allowable as is for the following reasons:

In US patent number 6,333,606, Lee et al. presents a ballast for the discharge lamp, utilizing high frequency voltage generated by alternatively switching two switching elements to light the discharge lamp (col. 1, lines 44-48; col. 2, lines 30-37). The discharge lamp driver serves to receive the high frequency voltage supplied by the switching operation of the first switching element and the second switching element to light the discharge lamp and includes a first winding of switching transformer, inductors, condensers and diodes (col. 2, lines 38-43). The concept of US 6,333,606 is fundamentally different from concept of the present invention, which teaches the generation of low-frequency AC current and providing the same to an electric load.

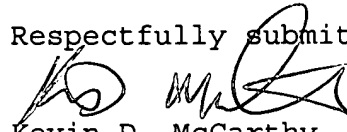
The present invention is directed to a high frequency AC current source driven inverter for providing a low frequency AC current to an electric load. The inverter includes a current splitting inductor or transformer, for splitting the high frequency AC current source into two high frequency AC current sources, a rectifier, for generating two DC current sources, by rectifying the resulted two high frequency current sources and a commutator, for generating a low frequency AC current from the resulted DC current sources. In some cases, loads, for example an HID lamp, may require an ignition phase. Accordingly, the inverter may also include a resonant circuitry, for generating a high voltage that is needed for ignition of such loads. In addition, a very high voltage spiker may be included in the low frequency inverter, which is fed from the above-mentioned resonant circuitry, for 'hot' ignition of an HID lamp. An additional feature of the present invention is that all power switches included in the inverter are soft switched for essentially eliminating switching losses.

The Applicant thinks the Examiner's statement at the second paragraph of point 2 "Lee discloses a ballast... an electric load with low-frequency AC current..." is a typographical error because Lee et al. disclose at column 1, lines 44-48 and column 2, lines 30-37 that the ballast is a high frequency ballast. The high frequency excitation is generated by Q1 and Q2, and is fed to a high frequency discharge lamp driver (Col. 2, line 38-43). That is, the load is driven by a high frequency AC current. In contradistinction, the present invention discloses a circuitry and method in which while starting with a high frequency AC current source it ends with a low-frequency AC current that is fed (driven) to an electric load.

The Applicant believes neither Lee et al. in US patent number 6,333,606 nor any author/inventor of other cited publications do not suggest, disclose and teach the solution disclosed in the present invention, and therefore the applicant respectfully requests the Examiner to allow the pending claims of the present invention.

The pending claims start at page 4 of this document. There are two amendments to the claims and those amendments are to change the term "forth" to "fourth" which is an obvious misspelling. By no means do those amendments alter the scope or breadth of the claims, it is merely to correct a typographical error.

Respectfully submitted



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